

REMARKS

Summary

Claims 1-40 were pending in the application. Claims 19-28 were allowed and Claims 1-3, 5-10, 12-16, 18 and 29-40, before were rejected in the present Office Action. Claims 4, 11 and 17 are objected to as being dependent upon a rejected claim. Claims 1, 8, 17 and 29 have been amended and claims 4 and 11 have been canceled. Claims 41-47 have been added. No new matter has been added as a result of this amendment. The Applicant has carefully considered the references and the reasons for rejection advanced by the Examiner, and respectfully traversed the rejections in view of the amendment and discussion presented below.

Examiner's Amendment

The Applicant appreciates the Examiner renumbering misnumbered Claims 20-41 as Claims 19-40 and amending the claim dependencies by Examiner's amendment.

Submission of Substitute Declaration and Amendment to Specification

The Applicant has supplied a substitute Declaration and amended the priority information in the first paragraph accordingly. The substitute Declaration provides the correct numbers (JP 2003-105565, 2003-105561, and 2003-105401) for the priority documents originally filed with the application on March 29, 2004.

Rejection of Claims

Claims 1, 2, 29-33 and 35-40 were rejected under 35 U.S.C. §102(e) as being anticipated by Taira et al (U.S. pat. 6,731,243 B2). Claims 8, 10 12-15 and 18 were rejected under 35 U.S.C. §102(e) as being anticipated by Van Hoozen et al (U.S. pat. 6,181,279 B2). Claims 29, 32 and 34 were rejected under 35 U.S.C. §102(e) as being anticipated by Shibata et al (U.S. pat. 6,801,167 B2). Claims 3 and 6 were rejected under 35 U.S.C. §103(a) as being unpatentable over Taira et al. Claims 9 and 16 were rejected under 35 U.S.C. §103(a) as being

unpatentable over Van Hoozen. Claim 5 was rejected under 35 U.S.C. §103(a) as being unpatentable over Taira in view of Van Hoozen.

Claims 4, 11 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten independent form including all of the limitation of the base claim and any intervening claims.

Claim 1 has been amended to incorporate all elements of claim 4, and claim 8 has been amended to incorporate all elements of claim 11. In addition, claim 17 has been amended to be dependent on claim 8. Accordingly, amended independent claims 1 and 8 and dependent claims 2, 3, 5-7, 9, 10 and 12-18 are allowable.

Claims 19-28 were allowed.

Independent claim 29 has been amended to incorporate the elements of claim 4. Claim 29 recites a patch antenna apparatus comprises a ground electrode disposed between the ground plane and the dielectric substrate. On the other hand, Taira does not teach or suggest the element of the ground electrode. Therefore, claim 29 is allowable for this reason and its dependent claims 30-33 and 35-40 are also allowable without more.

New Claims

The Applicant has added new claims 41-47.

New claim 41 recites that a patch antenna apparatus comprises a metal frame surrounding a peripheral surface of the dielectric substrate. In addition, the metal frame has an opening which is disposed not to overlap with the patch electrode in a plan view of the patch antenna. It should be noted that an example of the patch antenna apparatus is shown in pages 8-12, lines 3-5 and Figs 1-3.

As compared to claim 41, none of the prior art cited the Examiner teaches or suggests such a structure as it relates to the opening of the metal frame.

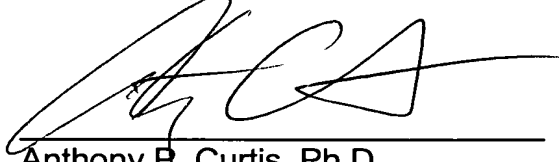
Furthermore, each element of new dependent claims 42-47 corresponds to each element of original claims 2-7.

For at least these reason, new claims 41-47 are allowable.

Conclusion

The Applicant respectfully submits that pending claims 1-3, 5-10, 12-40 and new claims 41-47 are in condition for allowance. If for any reason the Examiner is unable to allow the application in the next Office Action and believes that a telephone interview would be helpful to resolve any remaining issues, he is respectfully requested to contact the undersigned attorney.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'APC', is written over a horizontal line.

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